

Heights of rivers—Continued.

Stations.	Dang- er- point gauge.	Highest water.		Lowest water.		Monthly range.
		Height.	Date.	Height.	Date.	
<i>Savannah River.</i>						
Augusta, Ga.	32.0	15.8	21	6.3	3	9.5
<i>Willamette River.</i>						
Portland, Oregon	15.0	11.2	29	0.8	15-18	10.4
<i>Susquehanna River.</i>						
Harrisburg, Pa.	17.0	4.2	12	0.9	24	3.3
<i>Alabama River.</i>						
Montgomery, Ala.	48.0	19.9	22	3.2	1.5	16.7
<i>James River.</i>						
Lynchburg, Va.	18.0	2.5	16, 17	0.2	13	2.3
* River frozen. † For 17 days. ‡ For 22 days. ‡ For 27 days. ¶ For 26 days. ¶ For 28 days.						

FLOODS.

Heavy rain the latter part of the month caused destructive floods over the greater part of California. In Humboldt county streams were flooded, and considerable damage was caused to property along the Eel River. High water was general throughout the Sacramento and San Joaquin valleys. On the 17th the stage of water at Sacramento, 28.7 feet, was the highest ever reached at that place. The levee on the Yolo county side of the Sacramento broke in several places, and large tracts of cultivated land were submerged. The San Joaquin River was reported the highest ever known and large areas of bottom land were overflowed. Heavy rain also flooded streams in the southern part of the state, causing considerable damage of a minor character.

ATMOSPHERIC ELECTRICITY.

AURORAS.

Auroras were reported as follows: 4th, Winnebago, Ill.; Angola and Point Isabel, Ind.; Alta, Iowa; Orono, Me.; Cumberland, Darlington, and Fallston, Md.; Amherst, Concord, Fall River, Leicester, and Woods Holl, Mass.; Mottville, Mich.; Farmington, Fergus Falls, Maple Plain, Saint Olaf, and Sheldon, Minn.; Havre and Helena, Mont.; Moorestown, N. J.; Setauket, N. Y.; Bismarck, Napoleon, and Wild Rice, N. Dak.; Bangorville, New Berlin, Upper Sandusky, and Wooster, Ohio; Kingston and Narragansett Pier, R. I.; Pierre and Wolsey, S. Dak.; Dale Enterprise, Va.; Pine Hill, Wash.

5th, Nashua, N. H.; Woodbridge, N. Dak. 7th, Webster, S. Dak. 8th, Surface Creek, Colo. 11th, Cornish, Me.; Webster, S. Dak. 12th, Cresco, Iowa; Cornish, Gardiner, Houlton, and Orono, Me.; Sheldon, Minn.; Ashley, Bismarck, Grand Forks, Grand Rapids, Gallatin, Napoleon, Wild Rice, and Woodbridge, N. Dak.; Kimball and Webster, S. Dak.; Embarrass, Medford, and New Holstein, Wis. 13th, Cornish and Orono, Me.; Berlin Mills, N. H.; Fort Buford and Woodbridge, N. Dak. 14th, Fort Buford, N. Dak.; Phoenixville, Pa. 15th, Webster, S. Dak. 17th, Glendive, Mont.; Newark, N. J. 18th, Eastport, Me. 19th, Collegeville and Maple Plain, Minn.; Havre, Mont.

21st, Fort Buford, Gallatin, and Napoleon, N. Dak.; Medford, Wis. 22d, New Hartford, Conn.; Concord and Royalston, Mass.; Marquette, Mich.; Saint Olaf, Minn.; Nashua, N. H.; Number Four and Oswego, N. Y.; Fort Buford and Woodbridge, N. Dak.; Valley Junction, Wis. 23d, Concord, Mass.; Clear Lake, Collegeville, and Maple Plain, Minn.; Gallatin, Grand Forks, and Woodbridge, N. Dak.; Webster,

S. Dak.; Hartland, Vt.; Barron and Medford, Wis. 24th, Woodbridge, N. Dak.; Ellsworth, Ohio; Elkton and Webster, S. Dak. 25th, Collegeville, Minn.; Woodbridge, N. Dak. 26th, Collegeville and Wabasha, Minn.; Canton, Mo.; Berlin Mills, N. H.; Webster, S. Dak.

THUNDERSTORMS.

Description of the more severe thunderstorms reported for the month is given under "Local storms."

Thunderstorms were reported as follows: East of the Rocky Mountains they were reported in the greatest number of states, 14, on the 7th; in 10 on the 8th; in 11 on the 6th; in 6 on the 5th and 17th; in 5 on the 13th and 19th; in 4 on the 12th and 16th; in 3 on the 18th and 31st; in 2 on the 4th, 10th, 11th, 14th, 15th, 27th, and 30th; and in 1 on the 1st, 3d, 20th, and 23d. No thunderstorms were reported on the 2d, 9th, 21st, 22d, 24th, 25th, 28th, and 29th.

East of the Rocky Mountains thunderstorms were reported on the greatest number of dates, 12, in Texas; on 9 in Mississippi; on 7 in Louisiana; on 6 in South Carolina; on 5 in Arkansas, Georgia, and New York; on 4 in Alabama, Florida, Missouri, and Tennessee; on 3 in Indiana and Oklahoma; on 2 in Illinois, Indian Territory, Kansas, Kentucky, Michigan, New Jersey, Ohio, and West Virginia; and on 1 Maryland, Massachusetts, North Carolina, Pennsylvania, and Virginia.

West of the Rocky Mountains thunderstorms were reported in California on the 3d and 25th; in Nevada on the 24th; in Oregon on the 20th and 21st; and in Washington on the 4th, 7th, 8th, 16th, 17th, 20th to 24th, and 28th. In states and territories other than those named no thunderstorms were reported.

STATE WEATHER SERVICES.

[Temperature in degrees Fahrenheit; precipitation, including melted snow, in inches and hundredths.]

The following extracts and summaries are republished from reports for December, 1892, of the directors of the various state weather services:

ALABAMA.

Temperature.—The mean was 0.3 above the normal; maximum, 78, at Livingston, 4th; minimum, 9, at Florence, 27th; greatest monthly range, 69, at Florence; least monthly range, 54, at Maysville.

Precipitation.—The average was 0.36 above the normal; greatest monthly, 7.06, at Mobile; least monthly, 2.70, at Geneva. — P. H. Mell, Observer, Weather Bureau, Auburn, director.

ARIZONA.

Temperature.—The mean was 4.3 below the normal; maximum, 85, at Rancho del Pueblo, 13th and 14th; minimum, —5, at Flagstaff, 7th; greatest monthly range, 65, at Rancho del Pueblo; least monthly range, 45, at Oracle.

Precipitation.—The average was 0.93 below the normal; greatest monthly, 1.79, at Natural Bridge; least monthly, 0.00, at several stations.

Wind.—Prevailing direction, southwest.—J. C. Hayden, Observer, Weather Bureau, Tucson, director.

ARKANSAS.

Temperature.—The mean was 3.0 below the normal; maximum, 84, at New Gascony, 3d; minimum, —10, at Rogers, 26th; greatest monthly range, 80, at Rogers; least monthly range, 50, at Texarkana.

Precipitation.—The average was 4.34 above the normal; greatest monthly, 16.44, at Madding; least monthly, 3.17, at Keesees Ferry.

Wind.—Prevailing direction, north.—M. F. Locke, Commissioner of Agriculture, Little Rock, director; F. H. Clarke, Local Forecast Official, Weather Bureau, assistant.

CALIFORNIA.

Temperature.—Maximum, 88, at Duarte, 27th; minimum, 10, at Susanville,